

REMARKS/ARGUMENTS

Claims 1-20 are pending. Claims 1, 7, and 14 have been amended to more particularly point out and distinctly claim Applicants' invention. No new matter has been introduced thereby. Applicants respectfully submit the claims as amended comply with 35 U.S.C. § 112.

Claims 14-20 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. Claims 14-20 have been amended to distinctly claim a computer system including a computer program product. Applicants' respectfully submit that the Section 101 rejections be withdrawn.

Claims 1, 4, 7, 10, 14, and 17 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Fisk et al. (U.S. Patent Publication No. 2004/0068672).

Applicants respectfully submit that independent claim 1 is patentable over Fisk et al. because, for instance, Fisk et al. does not teach or suggest "said controller receives an instruction from said computer to turn on or off a disk device corresponding to said logical unit; and wherein, based on said instruction, said storage system turns on or off the disk device corresponding to the logical unit independently of disk devices corresponding to the other logical units."

Applicants respectfully submit that independent claim 7 is patentable over Fisk et al. because, for instance, Fisk et al. does not teach or suggest "said controller provides said storage system with an instruction to turn on or off a disk device corresponding to said logical unit; and wherein said storage system receives said instruction; and wherein said storage system turns on or off said disk device corresponding to said logical unit based on said instruction independently of disk devices corresponding to the other logical units."

Applicants respectfully submit that independent claim 14 is patentable over Fisk et al. because, for instance, Fisk et al. does not teach or suggest "a code for said computer to provide said storage system with an instruction to turn on or off a disk device corresponding to said logical unit; a code for said storage system to receive said instruction; a code for said

storage system to turn on or off a disk device corresponding to said logical unit based on said instruction independently of disk devices corresponding to the other logical units."

The present invention is related to prolonging operation times of disk devices including a disk array. The present invention is also related to decreasing the disk array power consumption. The feature of the present invention resides in that the computer, for transmitting a read request or a write request for data having been stored or to be stored in a logical volume within the storage system, transmits an instruction to turn on or off a disk device corresponding to the logical unit to the controller within the storage system. See, e.g., page 5, lines 24-27; page 19, lines 19-22; FIG. 8.

Fisk discloses that the controller 16 within the data storage system 10 turns on or off the disk 32 in accordance with a read or write request (see, e.g., paragraphs [0009], [0012], [0017], [0025]). However, Fisk does not teach or suggest such the feature of the present invention that the computer, for transmitting a read request or a write request for data having been stored or to be stored in a logical volume within the storage system, transmits an instruction to turn on or off a disk device corresponding to the logical unit to the controller within the storage system. Further, according to Fisk, as described above, since it takes a time for turning on or off the disk device, an idea is required as to the accessing response efficiency so as to not degrade or delay the accessing responsibility.

For at least the foregoing reasons, claims 1, 7, and 14, and claims 4, 10, and 17 depending therefrom, are patentable over Fisk et al.

Claims 6, 12-13, 19 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fisk et al. (U.S. Patent Publication No. 2004/0068672).

Claim 6 is submitted to be patentable as being directed to additional features of the invention as well as by being dependent from allowable claim 1. For example, claim 6 recites "computer provides said storage system with an instruction to turn on or off a disk device corresponding to said logical unit." This feature is neither taught nor suggested in the cited reference.

Claims 12-13 are submitted to be patentable as being directed to additional features of the invention as well as by being dependent from allowable claim 7. For example,

claim 12 recites "computer instructs said storage system to turn on or off a disk device corresponding to a logical unit specified by a user from said management terminal."

Claims 19-20 are submitted to be patentable as being directed to additional features of the invention as well as by being dependent from independent claim 14. Claim 14 is directed to a computer system including computer program code for the storage system to turn on or off a disk device corresponding to a logical unit based on an instruction. This feature is neither taught nor suggested in the cited reference.

Claims 2-3, 5, 8-9, 11, 15-16, and 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Fisk et al. in view of Birrell et al. (U.S. Patent No. 6,332,175).

Claims 2-3, 5, 8-9, 11, 15-16, and 18 are submitted to be patentable as being directed to additional features of the invention as well as by being dependent from allowable claims 1, 7, and 14. As discussed above, Fisk does not teach or suggest transmitting a read request or a write request for data having been stored or to be stored in a logical volume within the storage system, and transmitting an instruction to turn on or off a disk device corresponding to the logical unit to the controller within the storage system.

Birrell does not overcome the deficiencies of Fisk et al. Birrell merely discloses a single hard disc device and does not show a logical volume. See, e.g., FIG. 1 and column 4, lines 4-5. Birrell does not teach or suggest the on/off control of the power source of the disk device corresponding to the logical unit.

For at least the foregoing reasons, claims 2-3, 5, 8-9, 11, 15-16, and 18 are patentable over the cited references.

CONCLUSION

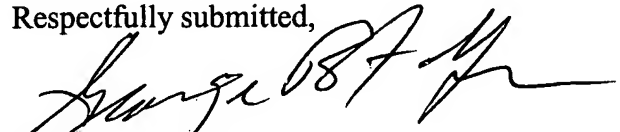
In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

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Reply to Office Action of June 26, 2006

PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "George B. F. Yee", with a long horizontal flourish extending to the right.

George B. F. Yee
Reg. No. 37,478

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 650-326-2400
Fax: 415-576-0300
RL:cl
60864344 v1